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RESPONSE TO REGULATOR COMMENTS OU 2 REMEDIAL INVESTIGATION/FEASIBILITY
STUDY WORK PLAN NTC ORLANDO FL
11/6/1995
ABB ENVIRONMENTAL



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November 6, 1995

Commanding Officer
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P.O. Box 190010
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Attn: Barbara Nwokike, Code 187300

Subject: Response to Comments, OU2 RI/FS Work Plan
EPA comments dated 05 Sep 95 and FDEP comments dated 11 May 95
Naval Training Center, Orlando
CTO 107, Contract No. N62467-89-D-0317

Dear Ms. Nwokike:

Attached is our response to EPA and FDEP comments for the McCoy Annex Landfill OU 2 (Draft) RI/FS Work Plan. We recommend that these comments be discussed at the November OPT meeting in order to address any issues that may not have been fully resolved. We will make appropriate revisions to the text and/or figures to reflect the comments but will not produce the final document until we have discussed our responses with the other OPT members.

Should you have any questions, please contact Richard P. Allen at (904) 269-7012 or me at (407) 895-8845.

Very Truly Yours,

ABB ENVIRONMENTAL SERVICES, INC.

John P. Kaiser
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Greg Brown, FDEP
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Enclosures

JK/cp
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ABB Environmental Services, Inc.

Response to Comments
EPA comments, dated 05Sep95

The following is our response to EPA comments dated 05Sep95. They include two general comments and three specific comments.

They have also attached comments to the OU 1, North Grinder Landfill RI/FS Workplan, dated 05Jan95. We will incorporate these comments into the OU 2, McCoy Annex Landfill RI/FS Workplan, as appropriate.

Section I. General Comments

1. The field and analytical data generated during the RI will be presented graphically as contour maps whenever appropriate and whenever such data presentation will facilitate a better understanding of potentially complex spatial relationships between various chemical parameters.

2. The evaluation of investigatory data in the comparison to background will be handled through the use of some of the more widely used statistical approaches (i.e., Mann-Whitney, Student T, and Box and Whisker plots). These approaches will attempt to identify outliers within preselected data populations and established confidence intervals. This will support the comparison of site data to established background concentrations and/or ranges.

The use of nonparametrics for statistical evaluation will be limited to the evaluation of sediment and surface water data. For these media, it is assumed that contaminant distribution will be more homogeneous and thus will not be biased. Nonparametrics relies on the randomization of sample location with the assumption that any location carries an equal probability of being sampled, thus ensuring against biased sampling from unknown processes. This approach is consistent with the identified population (upper quartile) and confidence interval (95%) and will support the evaluations of risk and potential remedial alternatives.

Section II. Specific Comments

1. The first full paragraph of Page 2-22 will be rewritten as follows:

"From a regulatory standpoint, the McCoy Annex Landfill will be treated as a closed landfill. However, current reuse scenarios include its continued use as a golf course, with residential areas outside of, but adjacent to the closed landfill. For purposes of this RI/FS workplan, it is assumed that no utilities pass through the former landfill nor do irrigation lines penetrate through the soil cover into landfill materials. If such utilities exist, therefore, they will be removed from service or replaced with utilities that do not penetrate the soil cover into landfill materials. This will protect maintenance workers from potential exposure to direct contact with landfill wastes."

2. As previously stated, there are no records which indicate that ordnance was

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disposed of in the landfill. The primary intent of the geophysical survey which is planned (magnetometer, terrain conductivity [Geonics EM-31D], and ground penetrating radar surveys) is to map the boundaries of the landfill and to locate "hot spots" that might warrant source removal to support the selected remedial alternative. If future information is disclosed that indicates a strong likelihood of UXO, then a time domain metal detector survey (Geonics EM-61) could be added to complement the suite of techniques already in place.

3. We view as unlikely the potential exposure of recreational users to landfill gases, which is why this exposure route has not been included as a probable condition on the Conceptual Site Model, Figure 2-4 (Page 2-18). Inhalation is included as a potential deviation, however, and inhalation exposure to landfill gases will be evaluated as part of the human health risk evaluation (Section 5.1.3 Exposure Assessment).

EPA Comments on the Draft RI/FS Work Plan for Operable Unit 1, North Grinder Landfill, were included in the response to comments for Operable Unit 2, McCoy Annex Landfill. Those comments have been reviewed in the context of OU 2, and our response follows.

1. Comment 1 is not appropriate for OU 2, McCoy Annex Landfill.

2. Comment 2 is not appropriate for OU 2, McCoy Annex Landfill.

3. Comment 3 is noted and text has been revised as follows: in Section 2.3, p. 2-4, second complete paragraph, after last sentence ending with "...flow rates in the surficial aquifer," insert the following: "The prevalence of karst activity and sinkhole development throughout the Greater Orlando area will be considered in the hydrogeologic characterization."

4. Comment 4 has been incorporated into the work plan for OU 2, McCoy Annex Landfill in a similar manner to the OU 1 work plan. Specifically, the two bulleted items at the bottom of page 2-14 have been revised to now read:

- Samples to evaluate gas generation and migration from the landfill will be taken. Hydrologic, groundwater, and surface soil data will be collected on a grid or biased basis due to the potential heterogeneity involved.

- In areas where contamination is considered to be either unlikely or more homogeneously distributed (sediment and surface water) a statistically based sampling methodology will be applied."

In addition, in the second complete paragraph on p. 2-15, fifth line, the phrase "...will not exceed..." has been replaced by "...will equal or exceed..."

ABB-ES believes that any detailed discussion of receptors over and adjacent to the landfill and the exposure units (EU) appropriate for these receptors is

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unnecessary given that the presumptive remedy will be utilized. However, the sampling approach outlined above addresses EPA concerns regarding EU criteria addressed in comments and at the January 12 and 13 BCT meeting. The sampling approach proposed is sufficient to support the FS and any risk evaluations which may need to be conducted.

5. Comment 5, Paragraph 2 is not appropriate for OU 2, McCoy Annex Landfill, as the Conceptual Site Model, p. 2-18, is somewhat different than for OU 1.

In Comment 5, Paragraph 3, ABB-ES observes that under the presumptive remedy, a proper cap or adequate cover materials will be installed, and containment, treatment or venting of landfill gases will take place. The presumptive remedy, along with a maintenance and monitoring program to be included with the remedy, eliminates the need to consider these pathways in the conceptual model. However, it should be noted that sampling data will be collected from appropriate media to permit proper engineering design.

In Comment 5, Paragraph 4, potential deviation no. 2, p. 2-19, has been rewritten so that it now reads:

"(2) Contaminated offsite groundwater. It is possible that contaminants have leached into the groundwater from contact with landfill materials, and that area residents are currently withdrawing this water from the surficial aquifer (or may in the future) and using it in sprinkler systems for irrigation (creating potential inhalation and dermal exposure) and/or as a potable water source."

Sampling of landfill cover soil is intended for engineering design purposes and not for pathway and exposure concerns as represented in the conceptual model. Landfill cover thickness, continuity and quality concerns are addressed under the presumptive remedy.

6. In Comment 6, Paragraph 1, the workplan assumes that landfill cover will be maintained to prevent exposure to humans, but that the cover may not prevent exposure to burrowing terrestrial biota. For purposes of these discussions, onsite refers to anything within the boundary of the landfill as defined by the geophysical survey and sampling programs.

In Comment 6, Paragraph 2, the conceptual site model and Tables 2-4 through 2-6 indicate that both probable and potential exposure pathways will be evaluated during the RI. The conceptual site model considers the presence of landfill gases, regardless of the source of the contaminant, thus keeping the emphasis on a simple conceptual site model. The proposed 175 soil vapor implants around the perimeter of the landfill will permit monitoring for contaminants at a sampling frequency appropriate to findings of prior soil vapor analyses.

In Comment 6, Paragraph 3, ABB-ES recognizes that there may be some utilities which currently pass through the landfill wastes. But the use of the presumptive remedy would preclude the maintenance of existing utilities or installation of

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any future utilities. This is why ABB-ES has stated that any future reuse scenarios would involve the abandonment of any utilities which pass through landfill wastes.

7. Comment 7 has been treated in the OU 2 work plan consistent with the corresponding section in the OU 1 work plan.

8. Comment 8 was discussed at the BCT on January 12 and 13 (regarding the OU 1 work plan), and the BCT agreed to proceed as outlined in the workplan, with the proviso that if the geophysical program is inconclusive regarding the thickness of final cover, then hand-augered holes will be used to verify the thickness of the cover material at an appropriate number of locations. EPA suggested that soil cover thickness be determined at each soil gas sampler location and at each surface soil sampling station. As approximately 1800 soil gas samplers will be installed during the passive soil gas program (they will be installed on grid nodes 50 feet apart over the landfill footprint), ABB-ES suggests that soil cover thickness be measured at 10% of these locations, or a maximum of 180 locations. ABB-ES suggest that this effort is sufficient to support engineering cap evaluation. Appropriate text has been added in Chapter 3.0 to reflect this.

9. Comment 9 is noted.

10. Comment 10. One of the goals of a workplan is to establish DQOs that will support risk evaluation and remedial alternative evaluations. As agreed upon at the BCT, decision rules for determining whether remediation is warranted will be developed during the RI evaluation consistent with the presumptive remedy, with input from EPA and FDEP. At this point in the RI/FS process, it is not deemed appropriate to develop decision rules for potential pathways and exposures, since they have not been demonstrated to exist.

It is ABB-ES's view that the proposed sampling plan and associated DQOs sufficiently support the project goal of collecting data to design the presumptive remedy and evaluate possible risks associated with potential pathways, as shown in the conceptual site model. As stated in the EPA comment, the effort to develop acceptable error in the sampling program is not warranted when considering that remedial alternatives to eliminate the probable pathways have already been determined. Thus, the focus of data collection and evaluation is for the support of engineering design and not risk evaluation.

11. Comment 11 was discussed at the BCT of January 12 and 13, 1995 and it was agreed that ABB-ES would not revise the workplan because (1) geophysics will probably not be of use in determining the depth of waste at OU 2, and (2) it will also likely be of little use in defining subsurface lithology since the literature indicates the surficial aquifer is reasonably homogeneous.

Any uncertainties which remain after the remedial investigation is completed can be managed through development of contingent actions during the remedial alternatives evaluation and design.

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12. In response to Comment 12, up to 1800 passive soil gas samplers will be installed on a 50-foot grid over the landfill footprint. At the BCT meeting of January 12 and 13, 1995, it was agreed that the passive soil gas data was to be used only in engineering considerations during cap design and would not be used for evaluating risk. After the presumptive remedy is implemented (which will likely include an enhanced soil cover or installation of an impermeable cap with a venting system), a portion of the monitoring program under the presumptive remedy will include ambient air monitoring.

In accordance with discussions at the BCT meeting of January 12 and 13, 1995, ABB-ES will use a Industrial Scientific MX251 Combustible Gas Analyzer or equivalent to measure methane concentrations in the cover materials during the installation and retrieval of the passive soil gas samplers. The text of the workplan will be revised accordingly.

13. Comment 13 is noted. During discussions at the BCT on January 12 and 13, 1995, ABB-ES presented the rationale for the subsurface investigation strategy presented in the workplan. In those discussions, a step-by-step approach was presented starting with the geophysical program, and continuing with the TerraProbe™, cone penetrometer, and monitoring well installation programs. This resulted in a consensus from members of the BCT that the strategy is sound. Accordingly, the text will not be revised.

14. In accordance with changes made in Section 2.6 resulting from EPA comment no. 4, the first paragraph in Subsection 3.4.1, pp. 3-8 and 3-9 was revised to be consistent with the biased sampling approach suggested by EPA and FDEP. This first paragraph now reads:

"The surface soil sampling program will be conducted based on the sampling methodology presented in Section 2.6. For the McCoy Annex Landfill, it is proposed that one surface soil sample per acre be taken (approximately 99) within the depth range of 0 to 1 foot. Samples would be located within the landfill cover material and sampled systematically throughout the landfill footprint. Each sample would be composited from five locations within the central portion of each one acre block as indicated in the composite pattern presented in Figure 3-?. Samples taken for VOCs would not be composited, but would be taken from the central node of the composite pattern."

As per discussions at the BCT meeting of January 12 and 13, 10% of samples in each media (soils, groundwater, surface water, and sediment) will be submitted for PCB analysis. Dioxins will only be analyzed if PCBs are detected. The text has been revised in several places to reflect this modification.

15. Comment 15 is not applicable to OU 2, the McCoy Annex Landfill. The text in Subsection 3.4.2, Paragraph 1 should remain unchanged.

Regarding Paragraph 2 of Comment 15, in ABB-ES's view, since the base has not verified the source of the radium used in the painting process, both potential

sources (Uranium and Thorium) and daughter products would be analyzed. This would also be useful in comparing against upgradient concentrations since these radionuclides can lead to high levels of radium (through decay) that would not be a result of base activities. Specific radionuclides would only be analyzed if MCL exceedances of gross alpha and gross beta were detected.

Regarding Paragraph 3 of Comment 15, it is ABB-ES's position that leachability analysis is vital in the consideration of the impact of potential remedial technologies when remediating sediments. For example, in an aquatic environment, one needs to consider the impact of remediating sediments versus leaving them in place, and leachability analysis will give a more accurate indication of any long term impact involved in leaving sediments in place than total constituent analysis. PCBs will be treated as discussed in Comment 14.

16. The terms listed in Comment 16 will be defined appropriately in the text. The following text will be added to the workplan on p. 3-13 in the middle of the third complete paragraph:

"'Upgradient' refers to any point in the direction from which groundwater flows. 'Downgradient' refers to any point in the direction toward which groundwater flows. The term 'lateral' refers to any location located downgradient that is also offset laterally from the direction of groundwater flow. Implicit in all three terms is their spatial relationship to a point of interest, in this case, the North Grinder Landfill. 'Characterization' is a term that refers to the placement of monitoring wells within a contaminant plume such that they characterize the plume sufficiently to predict contaminant concentrations and migration pathways. The ultimate goal of the placement of characterization wells and wells outside of a contaminant plume is to enable evaluation of risks and evaluation of remedial alternatives and further monitoring to support potential remedial actions."

17. Regarding Comment 17, ABB-ES wishes to clarify that implementation of the presumptive remedy will eliminate any exposure risks onsite, and as such, exposure risks onsite will not be evaluated. Offsite risks will be evaluated consistent with identified exposures indicated on the conceptual site model or as developed during the remedial investigation.

18. Comment 18 is noted. The first sentence of Section 6.4 has been revised to read, "IDW will be containerized for characterization and classification." No IDW will be redeposited back to its originating borehole. IDW will be handled in accordance with Chapter 6 of the workplan and the POP (ABB-ES, 1994a, Section 4-10, pp. 4-68 to 4-70).

19. Part 1 of Comment 19 is noted. To address Part 2 of Comment 19, the first complete sentence on p. 6-7 has been deleted.

20. It is the Navy's position that IDW will be handled in a manner consistent with the CERCLA program (even though NTC, Orlando is not an NPL-listed site) and

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consistent with RCRA requirements and base standard procedures.

Regarding Part 2 of Comment 20 (PPE), the text under the heading PPE has been revised to read, "The incidental contact with waste or contaminated media by personal protective equipment (PPE) typical of CERCLA site investigations does not warrant management of PPE as non-hazardous, solid waste. However, if exposure to radioactive materials occurs, PPE will only be regarded as hazardous if radiological measurements indicate radioactivity in excess of 2,000 pCi/g."

21. Comment 21 is noted.

22. Comment 22 is noted. During the BCT of January 12 and 13, it was discussed and agreed upon by the BCT that, consistent with the preamble of the presumptive remedy, any aspect of the CERCLA municipal landfill should be utilized where applicable.

23. Regarding Comment 23, Part 1, text on Table 8-1, p. 8-3 has been revised to read "Compacted clay covered with a synthetic membrane (20 mil minimum) followed...".

For Part 2 of Comment 23, Table 8-1, on p. 8-6, ABB-ES has eliminated interceptor trenches in the process options listing.

24. As recommended in Comment 24, 40 CFR Part 270 was deleted from the ARARs list because no offsite remedial actions are anticipated. ABB-ES has also replaced 40 CFR Part 257 with 40 CFR Part 258 as the more appropriate solid waste regulation.

Response to Comments
FDEP comments, dated 11May95

The following is our response to 11 FDEP comments dated 11May95.

1. FDEP Comment 1 is addressed with the response to EPA Comment 4, repeated here for clarity:

There is confusion in the terminology which ABB-ES used in the statistical sampling section presented in Section 2.6. Some of that confusion may have resulted from the fact that there is a typographical error in Section 2.6, p. 2-14, bullet item no. 2. In the third line of that bullet, the word "biased" should have read "based". To correct any remaining confusion, the text has been revised as follows. The two bulleted items now read:

- "• Samples to evaluate gas generation and migration from the landfill will be taken. Hydrologic, groundwater, and surface soil data will be collected on a grid or biased basis due to the potential heterogeneity involved.

- In areas where contamination is considered to be either unlikely or more homogeneously distributed (sediment and surface water) a statistically based sampling methodology will be applied."

In addition, in the second complete paragraph on p. 2-15, fifth line, the phrase "...will not exceed..." has been replaced by "...will equal or exceed..."

2. To address Comment 2, Subsection 2.7.1, potential deviation no. 2, p. 2-19, has been rewritten so that it now reads:

"(2) Contaminated offsite groundwater. It is possible that contaminants have leached into the groundwater from contact with landfill materials, and that area residents are currently withdrawing this water from the surficial aquifer (or may in the future) and using it in sprinkler systems for irrigation (potential inhalation and dermal contact of contaminants) and/or as a potable water source."

It is ABB-ES's position that this pathway should remain a potential deviation, since in an urban environment, it is unlikely that area residents are utilizing the surficial aquifer as a potable water source. It is our view that insufficient contamination exists in the surficial aquifer that would result in an inhalation and/or dermal exposure risk. However, this pathway will be evaluated during the RI portion of this investigation.

3. It is ABB-ES's position that the landfill cover was derived from a clean source and is uniform in nature. As such, it should not be treated as a potentially contaminated medium. The objective for sampling and analysis of the landfill cover is to evaluate the quality and competency of the cover for engineering considerations.

Accordingly, the first paragraph of Subsection 3.4.1, pp. 3-8 and 3-9 has been rewritten to read:

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"The surface soil sampling program will be conducted based on the sampling methodology presented in Section 2.6. For the McCoy Annex Landfill, it is proposed that one surface soil sample per four acres be taken (approximately 25) within the depth range of 0 to 1 foot. Samples would be located within the landfill cover material and sampled systematically throughout the landfill footprint. Each sample would be composited from five locations within the central portion of each two acre block as indicated in the composite pattern presented as a figure. Samples taken for VOCs would not be composited, but would be taken from the central node of the composite pattern. Statistical evaluation of contaminants will be completed, and outliers will trigger additional sampling to characterize contaminant distribution."

4. Comment 4 is noted. ABB-ES is aware of FDEP policy regarding a cancer risk of greater than $1E-6$. In order to achieve project objectives, potential remedial alternatives will be evaluated by comparing their effectiveness in reducing risk within the EPA allowable risk range ($1E-4$ to $1E-6$). This evaluation will permit a comparison of risk reduction versus the associated cost of each alternative so that risk management decisions can be made.

5. Comment 5 is noted.

The following responses are included for the five bulleted items in Greg Brown's Memorandum dated May 5, 1995 and attached to the Mr. Clowes comments of May 11, 1995:

Bullet No. 1. ABB-ES recognizes that there may be some differences between the McCoy Annex Landfill and the generic municipal landfill to which the presumptive remedy will be applied. However, during the BCT of January 12 and 13, it was discussed and agreed upon by the BCT that, consistent with the preamble of the presumptive remedy, any aspect of the CERCLA municipal landfill should be utilized where applicable. Source areas, or "hot spots" will be addressed during the geophysical and passive soil gas field investigations. If potential hot spots are determined, they will be investigated and, if confirmed, will be considered for early removal.

Bullet No. 2. ABB-ES recognizes that cap design will be an essential element of the remedial alternative under the presumptive remedy.

Bullet No. 3. The use of nonparametrics for statistical evaluation will be limited to the evaluation of sediment and surface water data. For these media, it is assumed that contaminant distribution will be more homogeneous and thus will not be biased. Nonparametrics relies on the randomization of sample location with the assumption that any location carries an equal probability of being sampled, thus ensuring bias sampling from unknown processes. This approach is consistent with the identified population (upper quartile) and confidence interval (95%) and will support the evaluations of risk and potential remedial alternatives.

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Bullet No. 4. The recent EPA DQO process was used in the proposed sampling program through (1) the identification of populations to be defined, and (2) through identification of acceptable confidence intervals to which those populations are identified. Thus, this assures the data collected will be focused, streamlined, and supportive of risk and remedial alternative evaluations.

Bullet No. 5. Bullet no. 5 is Noted.